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**FUTURE OPPORTUNITIES FOR RURAL AFRICA**

**edited by**

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## **SUMMARY**

Hunger has become such a significant and strategic problem in Sub-Saharan Africa (SSA) that it can no longer be evaded. With the majority of Africans living in rural areas, rural and urban population rapidly increasing, cereal and livestock production stagnant or falling, nearly 200 million people living with food insecurity, child malnutrition doubling, poverty increasing, and economic growth lagging behind other developing regions, a new development strategy is urgently needed for this region. To drive out hunger, agriculture needs to be the core component of poverty alleviation programs in SSA. But agriculture alone will not end hunger. Seasonal migration and rural nonfarm activity are also important to the livelihood strategies of rural people. And HIV/AIDS has taken the life of an estimated 7 million agricultural workers since 1985, and is projected to reduce the agricultural labor force by another quarter or so by 2020 in some African countries. Therefore, linkages with other sectors such as health and the nonfarm economy are essential for success.

On November 26-27, 2001 the International Food Policy Research Institute (IFPRI) hosted a workshop for USAID titled “Future Opportunities for Rural Africa.” The workshop reviewed key issues that will affect the future of agriculture in Africa, including trade and market liberalization, technology development and dissemination, public infrastructure and human capital, equitable growth, and environmental degradation. Recognizing that past investments in agricultural development in SSA have had mixed and often disappointing results, emphasis was given to identifying some of the

more promising approaches for achieving successful agricultural growth in the future that could benefit the poor and protect the environment.

### *Managing Trade and Market Liberalization*

The trade and market liberalization reforms undertaken as part of structural adjustment programs in recent years have improved market performance in many African countries, yet the results have proved disappointing in terms of agricultural growth, export performance and poverty reduction. It is now recognized that these reforms were necessary but not sufficient to generate greater supply response and competitiveness in export markets, and they did little to ensure that small scale farmers, particularly those living in areas more remote from roads and markets, could benefit. Problems with quality standards, timing, and assuring adequate supply are penalizing local products in both domestic and international markets. More emphasis is therefore now needed on market development, including strengthening institutions responsible for standards and quality control, enforcement of contracts, market information, product promotion, etc; strengthening market support services (e.g. credit and other financial services, transport, refrigeration and storage); improving rural infrastructure, especially roads and telecommunications; and reinforcing policy makers' commitment to market reforms. Interventions that lower market transaction costs and provide producers with additional risk reduction mechanisms to supplement or replace traditional risk sharing mechanisms like social capital and informal safety nets will also be necessary. Non-governmental organizations (NGOs), community-based organizations (CBOs) and the private sector

could play a greater role in facilitating the development of effective marketing institutions, particularly in remote areas.

There is concern that market constraints will limit possibilities for agricultural led growth in Africa unless additional market and policy reforms are made. African farmers must become more competitive in export markets if they are to gain market share.

Africa's traditional export crops like coffee and tea have lost their competitive edge to other regions, in large part because of lack of technological change in recent decades and because of poor quality. These are problems that could be reversed with the right policy reforms. New niche markets for high value products and eco-friendly commodities exist, but require organized marketing and assured quality at international standards. Success will again depend on strengthening marketing institutions and investing in the right kinds of infrastructure.

In the global context, one of the greatest challenges facing Sub-Saharan Africa is getting developed countries to acknowledge the role that changing their own domestic agricultural policies can play in facilitating the entry of African nations into global markets. Until subsidies for agricultural production and trade barriers in developed countries are reduced, African countries will not be able to effectively participate in global agricultural markets. African countries will also have to struggle to compete against subsidized imports in their own domestic markets. SSA countries need to be effective participants in the WTO negotiations, and they badly need technical and institutional support for this purpose.

The greatest market opportunities for future agricultural growth are likely to be increasing domestic markets. Rapid urbanization will lead to greater commercialization

of African agriculture (at present only 25-30 percent of production is marketed) and to greater demand for higher value crops and livestock products and processed foods. Because of agricultural growth linkages, any acceleration of agricultural growth rates should also lead to expansion of domestic markets beyond that created by urbanization alone, including within rural areas. The development of regional economic arrangements within Sub-Saharan Africa such as ECOWAS and SADC may also offer new opportunities for marketing and trade in agricultural products. But again success will depend on strengthening marketing institutions and infrastructure to reduce marketing costs and improve quality standards.

*Achieving a Technological Revolution to Increase Agricultural Productivity and Lower Costs of Production*

Technological change is fundamental for successful agricultural growth and the average returns to past investments in agricultural research have been impressive, despite the poor performance of many national agricultural research institutions in Africa. Yet despite this evidence, African policy maker and international donors have allowed investment levels in agricultural research to stagnate in recent years. This is part of the reason for stagnating yields and food production, and the loss of competitiveness in traditional African export crops. Reversing this decline will require political persuasion to obtain a new commitment to long-term investment in technology development and dissemination, and significant reform of the publicly funded agricultural research and extension systems to make them more responsive to farmers' needs. At present, too little of the research that is taking place is market or farmer driven.

A renewed commitment to the provision of multi-year financing is essential to provide needed stability in the funding of long-term research programs and projects, and to enable national research institutions (NARIs) to undertake strategic planning and institutional strengthening. But such renewal depends on re-establishing confidence among political leaders in publicly funded agricultural research institutions. Two types of changes are needed. One is to redefine the relationship between NARIs and other public, private and civil society agents that undertake agricultural research and extension. The other is to reform the way public research institutions are funded and managed.

There is growing capacity for research and extension outside NARIs and this offers new opportunities to forge new partnerships between public institutions, universities, private-sector firms, and NGOs to capture synergies and differing comparative advantages. For example, private seed companies and input suppliers are playing larger roles as many countries liberalize and privatize their agricultural input markets. Many of these companies not only develop improved products of their own, including undertaking agricultural research, but also advise farmers about the use of products they sell. Marketing and processing firms are helping to reduce post-harvest losses. NGOs have also become important actors in spreading natural resource management practices regarding soil and water management, watershed development, and social forestry. They have a particular advantage in helping communities take collective action to implement improved natural resource management practices at the landscape level. Partnerships between these different kinds of agents could vary from the public sector contracting out some research and extension work to others who can undertake them more efficiently or perhaps in more pro-poor ways, to joint research

undertakings such as might be needed for some kinds of germplasm improvement and biotechnology research. The allocation of research activities amongst different types of agents could also be promoted by establishing competitive grant schemes at the regional and national levels.

New partnerships of these kinds would help improve the performance of NARIs. Additional reforms needed may include: a) increased reliance on user-based financing of some kinds of research to increase the sustainability and accountability to research users; b) forging, strengthening and institutionalizing linkages between researchers and research users in priority setting, conducting research and evaluating results, perhaps through established partnerships with farmers' organizations, trade associations and private firms; c) decentralizing NARIs and providing revenue retention authority to increase institutional autonomy and flexibility and spur competition among individual research units; and d) providing management training and rewarding leadership and commitment to enhance the success of national agricultural research systems.

On its own, the private sector is unlikely to undertake most of the research needed in SSA, including productivity enhancing biotechnology research. There are limited opportunities for private sector firms to recoup their investment costs in Africa specific research. Consequently, the public sector must continue to play a key role, either by undertaking the research itself or by funding others to do it. Publicly funded research is especially needed on post-harvest technologies, soil conservation and improvement, and biotechnology.

Even with potentially successful technologies, input delivery systems and rural credit institutions have traditionally been difficult to develop and have inhibited



technology adoption in SSA. Therefore, comprehensive development strategies that look beyond simple technology development to address barriers to adoption are critical.

The lack of rural delivery and credit systems to deliver technologies to farmers is a serious problem. Government run agricultural extension services are degenerating in a number of countries, and devolution of agricultural extension services to NGOs and community-based organizations has not been matched with needed financial resources or with the kinds of capacity building necessary to make this new paradigm operational.

*Building the Levels of Public Infrastructure and Human Capital Needed for Successful Rural Growth*

The level of rural infrastructure in SSA today is a small fraction of the levels that India and other Asian countries had in the 1950s prior to their Green Revolution. Moreover, the majority of Africa's farmers live in areas that have limited access to roads and markets. Without substantial increases in key infrastructure and human capital, it is hard to see how Africa can achieve the kinds of agricultural growth rates required to alleviate hunger, or how most smallholder farmers can participate in that growth. Recent evidence from India and China shows how critical past infrastructure investments were in achieving rapid agricultural growth in those countries, and even today additional investments in roads, telecommunications, agricultural research and education still yield high returns in the form of agricultural growth and rural poverty reduction, even in many poor rainfed farming areas. Similar studies need to be undertaken in Africa to help set future priorities for public investment. Failure to invest more in rural infrastructure will lead to disappointing levels of national agricultural growth and to dualistic development patterns wherein farmers located near roads and markets will benefit from trade and

market liberalization reforms and prosper while less fortunate farmers retreat further into subsistence farming.

Even though the returns to rural infrastructure investments are high and they benefit other sectors as well as agriculture, many African countries cannot afford the levels of investment required. New technologies for power generation (e.g. windmills and solar energy) and communications (e.g. satellite phones and TV) offer some low cost alternatives, but basic infrastructure in roads, transportation, water, education and health systems still require substantial investment in bricks and mortar and in the public institutions responsible for their provision. Moreover, with relatively low population densities and low value added per unit area, the possibilities for raising the needed funds at local levels are severely constrained. Central governments will have to provide much of the funding, and they in turn will require increased support from international donors.

There is also need to improve the quality of infrastructure and public services in rural Africa, including their maintenance, to reduce investment costs, and to ensure that the right kinds of infrastructure and services are provided for agricultural growth. Greater devolution of decision making to local governments and community-based organizations is important, both in the design of new investments and in their ownership, management and maintenance. Left to itself, centralized government agencies tend to overbuild rural infrastructure, placing, for example, greater emphasis on building all-weather roads for trucks when unpaved roads suitable for livestock transport may be quite adequate for local communities and cost much less to build and maintain. Co-financing arrangements can be very helpful in achieving local ownership, but are not sufficient. There is also need for clearly defined roles, local capacity, performance incentives, transparency and

accountability. Moreover, the capacity for locally driven development is limited unless local systems of public finance are in place and there is adequate capacity to manage development funds.

The public institutions responsible for providing infrastructure and basic public services also need strengthening, at both national and local levels. These institutions have declined in recent years, often victims of excessive zeal to downsize the public sector as part of structural adjustment programs, without adequate differentiation of inappropriate roles that some public agencies had performed (e.g. marketing monopolies) from much needed roles like the provision of rural roads and oversight of liberalized markets. Many public institutions still need to be reengineered to provide revised mandates and management structures, but they also need increased financial support. New financing arrangements are also appropriate to empower the users of public services (e.g. vouchers, user fees and other cofinancing mechanisms), and new partnerships need to be forged between the public, private and NGO sectors for the provision of some public services. Even where government must pay all or most of a service, this does not mean the public sector necessarily has to supply it. Contracting out arrangements with other parties can be much more cost effective, and may offer better possibilities for involving local people and communities. The types of partnerships desired will vary by sector and function, with many more opportunities to diversify supply arrangements for education and health services, for example, than provision of rural roads and market regulation.

Rural education can be a powerful investment for achieving agriculture productivity growth and reducing poverty, population growth and malnutrition. At the farm-level, non-formal training may be the most effective, including training for farmers

and women's organizations to develop technologies and carry out their own agricultural research. There is also a need for formally trained agricultural researchers and extension workers, though investments in training are lost if incentives are not in place to retain trained people. New training modalities such as information technology and distance learning offer additional ways of training larger numbers of people.

Microfinance institutions have been shown to be an effective mechanism for providing needed credit for entrepreneur activities and to smooth the seasonal consumption patterns of the poor. Microfinance schemes that have been built on local knowledge and practice, such as the use of local savings schemes and revolving credit mechanisms, have a good record of success. But microfinance institutions have largely shied away from lending for agriculture, leaving small-scale farmers with limited access to agricultural credit. Given their widespread networks and established relationships with producers, traders also have comparative advantages in delivering rural financial services, though institutions need to be developed for regulating their activities.

### *Making Agricultural Growth Equitable*

Agricultural growth that involves small-scale farmers can lead to considerable poverty reduction in its own right. But it will not be enough to eliminate poverty and hunger because many of the most vulnerable of the poor have limited access to land and other key resources needed to respond positively to growth opportunities. Labor markets can play an important role here, but are often thin and imperfect in rural Africa. Frequent crises and conflicts and HIV/AIDS are also significant constraints to achieving equitable agricultural growth. Agricultural growth must therefore be accompanied by adequate

safety nets to provide targeted assistance to the poor, both in times of crisis (e.g. droughts and conflict) and on a long term basis in the case of the chronically poor.

If agricultural growth is to significantly reduce poverty, then it is imperative that the vast majority of Africa's small-scale farmers share in that growth. Market and trade liberalization policies together with the virtual withdrawal of the public sector from the provision of many key agricultural services have made small farm agricultural development more difficult, especially in areas that have poor access to roads and markets. Even though small-scale farmers are still often the most efficient producers, they are often at a considerable disadvantage in both input and output markets and cannot easily compete against well connected large-scale farmers who buy and sell in much greater quantities and have better information about markets. Small farmers will need to diversify into labor intensive and high value products to improve their comparative advantage and value added per hectare, and they will need to organize to obtain better access to, and better terms in, the market. This will be especially important for export and high value products. They will also need to attain high quality standards for their products. Formation of voluntary farm cooperatives and associations offers one promising avenue. Contract arrangements with marketing agents (e.g. super markets and exporters) are also emerging as another promising approach in some parts of Africa. Policy makers also need to ensure that small farmers are not penalized in their access to public services, that publicly funded agricultural research addresses small farm problems as well as large, and that adequate infrastructure investments are made in the areas where small farms are concentrated.

Land is becoming scarce in many parts of SSA and many farms are becoming too small to provide viable livelihoods. Opportunities for redistributing land are more promising in today's political climate, and are even high on the political agenda in some countries (e.g. Zimbabwe and South Africa). Evolving land lease and sale markets are playing an important and spontaneous redistributive role in many, especially densely populated, communities, but government attempts to leverage such market transactions through market assisted land reform programs have met with only modest success.

The integration of HIV/AIDS education into agricultural projects and capitalizing on expert practitioners available in the fields of public health and education could help reduce the spread of HIV/AIDS. Developing institutions, including those for credit, micro finance, management of natural resources and others are particularly difficult in an environment where mortality is very high and there are few incentives to undertake initiatives with a medium to long-term planning horizon. Though HIV/AIDS crosses over socio-economic lines, the asset bases of the poor are most significantly affected when households are affected by HIV/AIDS.

The issue of targeting assistance to the needy is complicated and requires further research to identify who the poor are, where they are located, and their key characteristics. Interventions need to avoid disturbing important safety nets that are already built into social infrastructure. Finding effective mechanisms for improving the social, physical, and natural capital assets of the rural poor requires higher levels of community participation and involvement of stakeholders in project planning and development. NGOs and CBOs have demonstrated considerable success in undertaking poverty-reduction programs, as well as handling and distributing emergency assistance.

*Reversing the Degradation of Natural Resources While Also Accommodating Growing Rural Populations*

Land degradation and the unsustainable use of natural resources are limiting the potential for agricultural development in Sub-Saharan Africa. Growing populations and continued low levels of input use exacerbate the problem. Finding mechanisms for smallholders to take advantage of existing technologies for sustainable land management is a key issue to resolve. A wide variety of technologies for reducing land degradation and improving yields are available for the various agro-ecological conditions in SSA. The pressing question is how to deliver these technologies to farmers. Government, NGOs, CBOs, the private sector and individuals all have a potential role in the dissemination of information on technologies that will lead to improved land management. In general, strong community based institutions offer the greatest potential for the exchange of information on new technologies. Strengthening farmer organizations and other CBOs will facilitate innovation and adoption of natural resource conservation technologies. NGOs also have significant potential to have a lasting impact on land management through the development and dissemination of land management technologies and by organizing communities for successful collective action.

Additionally, institutional reforms are needed to create better incentives for rural people to sustainably manage their resources. In several Sub-Saharan African countries, the state has become increasingly involved in trying to regulate and manage natural resources, often generating negative environmental consequences and increasing incentives for resource degradation. Community-led initiatives may offer greater promise.

There is increasing evidence that relieving population pressure is critical to reducing natural resource degradation. The induced innovation paradigm (i.e. more people less erosion) does not hold in many cases. Developing non-farm activities may be a key livelihood strategy for reducing the negative effects of population on the environment – particularly in population dense areas where access to land is limited. In addition, effective livelihood strategies for less favored areas that incorporate natural resource management are urgently needed; however, they must be linked to the comparative advantages of these marginal areas.

New and emerging technologies such as geographic information systems (GIS) and biotechnology also offer opportunities for better management of natural resources. Remote sensing and GIS tools allow for empirical analyses of land use change over time and in a spatial context. Biotechnology research has shown that high value commodities for export and food crops can potentially reduce external input needs. For many regions of SSA that are dependent upon one or two staple crops that suffer from pests and diseases, new crops that offer resistance have enormous potential implications for food security and rural livelihoods in general. As food security and incomes improve, farmers will be more likely to invest in natural resource management technologies.

Emerging markets for ecosystem services have the potential to generate additional income from the sustainable use of natural resources (e.g. ecotourism and the sale of non-timber forest products) or with productive activities that are likely to simultaneously improve land quality while facilitating the preservation of existing natural resources (e.g. carbon sequestration through tree planting). However, developing markets for ecosystem services will present many of the challenges that more traditional markets face, including



requiring access to roads and other infrastructure, institutional requirements of third party verification, and establishing financial systems to pay farmers for ecosystem services (particularly in the case of carbon sequestration).

### *USAID's Agricultural Initiative to Cut Hunger in Africa*

The implementation of USAID's *Agricultural Initiative to Cut Hunger in Africa* revolves around three key questions:

#### WHAT COUNTRIES SHOULD BE THE FOCUS OF USAID EFFORTS?

USAID used several criteria including agricultural economic structure and performance, enabling environment, and strategic importance to select nine priority countries to focus its agricultural initiative efforts. This first selection resulted in equal distribution of countries across regions with Uganda, Kenya, and Tanzania from east and central Africa; Nigeria, Mali, and Ghana from west Africa; and South Africa, Mozambique, and Malawi from southern Africa. The program will further embrace sub-regional challenges such as increasing the efficiency of intra-regional trade; developing a framework to borrow and share knowledge, capacity, technology, and infrastructure; and creating information systems to access global markets and knowledge systems. Through these means, it is hoped to obtain significant spillover benefits to surrounding countries in each subregion.

- What products and commodities have the potential to drive agricultural growth and reduce hunger?

USAID plans to select a basket of goods and services (crop, livestock, and environmental products) for investment according to their perceived ability to drive agricultural growth. This basket needs to include dominant commodities for local consumption and export, options for diversification, and new products that will enable Africa to be competitive. However, several factors could affect the investment performance of this commodity basket. These include consumer demand, productivity increases, value added potential, share of population engaged in production and consumption of various products, and profitability.

- *What approaches and interventions will have the greatest impact on smallholder-based agricultural growth and rural incomes?*

Six potential areas for USAID intervention are technology applications, agricultural markets and trade systems, community-based organizations, human and institutional development, addressing the market and service needs of vulnerable groups, and sustainable environmental growth.

USAID will also place considerable importance on monitoring and evaluating the impact of their initiative. Key indicators will include agricultural growth rates, the number of poor and insecure people, the condition of natural resources, and the levels of complementary resources invested by African governments and other international donors. Appropriate indicators will need to be identified and benchmarked at an early stage.

The workshop was seen as the first step in mapping out a comprehensive new agricultural strategy for Africa. In early 2002, USAID will hold several consultations at the sub- regional and country level in order to facilitate dialogue. After the initial

consultations are completed, the information gathered will be compiled and placed in the public domain. This information will then be used to evaluate the potential impact of different options in the spheres of agricultural technology, infrastructure and public services, trade, markets, etc. on the rural poor in Sub-Saharan Africa. This will point the way for USAID and other donors to make major investments for propelling agricultural growth and reducing poverty in Sub-Saharan Africa.

## **INTRODUCTION**

Hunger has become such a significant and strategic problem in Sub-Saharan Africa (SSA) that it can no longer be evaded. With the majority of Africans living in rural areas, rural and urban population both rapidly increasing, cereal and livestock production stagnant or falling, 194 million people living with food insecurity, child malnutrition doubling, poverty increasing, and economic growth lagging behind other developing regions, a new development strategy incorporating different approaches needs to be developed for this region. To drive out hunger, agriculture needs to be the core component of poverty alleviation programs in SSA, but agriculture alone will not end hunger. Seasonal migration and rural nonfarm activity are also important to the livelihood strategies of rural people. And HIV/AIDS has taken the life of an estimated 7 million agricultural workers since 1985, and it is projected to reduce the agricultural labor force by 16 to 26 percent by 2020 for various SSA countries. Therefore, linkages with other sectors such as health and the nonfarm economy are essential for success.

On November 26-27, 2001 the International Food Policy Research Institute (IFPRI) hosted a workshop for USAID titled “Future Opportunities for Rural Africa.” The workshop was an opportunity for colleagues from USAID and IFPRI, together with other USAID partners and outside experts, to come together to discuss USAID’s renewed commitment to agricultural development in Sub-Saharan Africa (SSA). The workshop was intended to take stock of current and emerging issues, synthesize existing knowledge, discuss alternative development paths, identify a process for developing a

comprehensive investment strategy for rural Africa, and to discuss support systems for guiding and monitoring these investments.

This proceedings summarizes the presentations and discussions that took place at the workshop. The first session reviewed recent trends and future prospects in Sub-Saharan Africa. This was followed by panel presentations and discussions focusing on the key areas of trade and market liberalization, technology, public infrastructure and human capital, equitable growth, and reversing environmental degradation. For each of these key topics, the proceedings summarizes the discussions in terms of recent and emerging issues, challenges and constraints, knowledge gaps, and new approaches and best bets available to achieve the desired objectives. The final sessions of the workshop was devoted to a presentation and discussion of a draft of *USAID's Agriculture Initiative to Cut Hunger in Africa*.

## **KEY TRENDS FOR SUB-SAHARAN AFRICA AND FUTURE PROSPECTS**

Rajul Pandya-Lorch – 2020 Vision Initiative, IFPRI

For the past several decades, Sub-Saharan Africa has struggled with poor economic growth and an appalling incidence of poverty that consumes the vast majority of its people. Although there is considerable variance between and within countries of Africa, the region as a whole has consistently lagged behind the performance of other developing regions and presents the biggest development challenge for the future.

At 2.5 percent per year, Sub-Saharan Africa has the highest population growth rate of any developing region, although this has abated slightly from a rate of 2.8 percent in the late 1970s. Whereas two-thirds of Africa's population of 600 million now resides in rural areas, urban population growth is soaring, with the number of urban residents projected to exceed the rural population by 2030 due to outflows from rural areas. At the same time, the population segment over 65 is growing, such that Africa's demographic trend is one of urbanization and aging.

Although Africa's GDP growth has risen slightly from 1.7 percent per year in the 1980s to 2.2 percent per year in the 1990s, it lags behind other developing regions where combined average growth has been 3.5 percent during the 1980s and 1990s. Moreover, 20 (or half of) African countries experienced negative annual growth rates. With the majority of Africa's population residing in rural areas, growth in the agricultural sector is a must for tackling existing hunger and poverty and is key to stemming the huge influx of migrants to urban areas that cannot handle them. Unfortunately, agricultural growth in

Africa registered only 2.7 percent per year between 1990 and 1999 against a population growth rate of between 2.5 percent and 2.8 percent per year, such that there was no perceptible growth in per capita terms.

Around half of Africa's population (302 million) lives on less than \$1 per day (up from 217 million a decade ago, while an astounding 80 percent live on less than \$2 per day. The number of food insecure has also more than doubled to 194 million over the past decade while child malnutrition has doubled since 1970. The World Bank projects that poverty will increase by between 20-40 percent by 2015, although food security is expected to marginally decline for reasons that are not entirely clear.

HIV/AIDS is also taking its toll on Africa's most productive population. An estimated 7 million agricultural workers have died since 1985, while another 16 million deaths are likely to die within the next 20 years. The most devastating effects are felt in Southern Africa.

The considerable gains made by other developing countries in agricultural productivity have largely missed Africa. Per capita production indices for agriculture as a whole have stagnated in the past decade, while both cereals and livestock have experienced declines. Yields for cereals, roots and tubers are less than half of those of South Asia and one quarter of China's, though there is significant variance between African countries. Reasons for low yields stem from declining use of agricultural inputs like fertilizers, failure to expand the irrigated area, reductions in public expenditures for agricultural research, and the high incidence of conflict in the region. In 1999, 14 African countries were embroiled in conflict, generating 18 million refugees and shrinking food

production anywhere from 3 percent in Kenya to 44 percent in Angola. Worsening environmental trends only make the growth prospects for Africa even bleaker. It is reported that between the late 1940s and 1990, 65 percent of Africa's land was degraded to varying degrees, while 0.7 -0.8 percent of the forest cover disappears every year.

Without substantial change in Africa's agricultural development strategy, the future outlook for the continent is dismal. The rate of growth in cereal and meat production over the next 20 years is projected to slow and will not keep pace with demand, although growth in roots and tubers is expected to meet demand. Child malnutrition is expected to worsen by another 20 percent under optimistic assumptions, leaving 39 million children malnourished by 2020. Conflicts or political turmoil could augment this to as much as 50 percent. To bring child malnutrition down from 33 million today to 22 million by 2020 will require that average GDP for the region grows by 8 to 10 percent per year accompanied by \$107 billion of new investment in rural roads, irrigation, water, education and agricultural research between now and 2020<sup>1</sup>. This is \$26 billion greater than a simple projection of current levels of investment, or about \$1 billion more each year. The challenge is not so much to find the additional resources to make these investments, but to justify why they can be expected to have bigger payoffs for growth and poverty reduction than investments in other sectors.

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<sup>1</sup> The breakdown of the \$107 billion investment is as follows: Roads – \$37.9 billion; Irrigation – \$28.1 billion; Water – \$17.3 billion; Education - \$15.7 billion; Agricultural Research – \$8 billion (Rosegrant et al., 2001).



## **MANAGING TRADE AND MARKET LIBERALIZATION FOR RURAL GROWTH AND POVERTY REDUCTION**

Panel

Eleni Gabre-Madhin – Markets and Structural Studies Division, IFPRI  
Dirk Stryker – Associates for International Resources and Development  
Frederick S.M. Kawuma – Eastern Africa Fine Coffees Association  
Howard Sigwele – FANRPAN Secretariat

### **RECENT EXPERIENCE WITH TRADE AND MARKET LIBERALIZATION**

The overall experience with market reforms that took place as a result of structural adjustment programs in the 1980s is mixed. Agricultural market reforms included price liberalization, devaluation of exchange rates, regulatory changes and the restructuring of state-owned enterprises etc. Many reforms were either implemented partially, poorly, or in concert with policies that negated their effect. In general, output markets seem to have responded to the reforms with increased competition, declining marketing margins, and improved market integration. However, social capital has proved an important barrier to the entry of many new firms into wholesale trade, transport and external trade, and risky, personalized, and persistently cash based markets constrain more effective development of output markets. With respect to input markets, rapid entry of new firms, and increased retail outlets were the positive outcomes of reforms, but decreased access to credit, and overall decline in input use, particularly for food crops, affected many countries implementing market reform policies. The general supply response was an increase in export crop production, but food production and yields stagnated in many countries. The impact of the reforms on poverty has been mixed. In

general the income of small export crop growers increased and real consumer prices fell in many countries. However, farmers in areas removed from markets became worse off.

The constraints to achieving the objectives of market reforms include problems of partial implementation, limited infrastructure, and a lack of institutions that can effectively enforce property rights and contracts, reduce transactions costs, and enhance market competition and coordination. For example, if institutions to facilitate and enforce grades and standards for various export commodities are weak, then market reforms that seek to increase the export of high value commodities may fail.

The mixed experience with market and trade reform policies throughout Sub-Saharan Africa has led to a rethinking of market reforms. African policy makers are now questioning whether or not structural adjustment is a sufficient way forward, and are recognizing the importance of facilitating the establishment of infrastructure and institutions that will support market development. Market liberalization and structural adjustment, including the closing of parastatals has resulted in greater reliance on the private sector for rural service delivery, but also fiscal belt-tightening in agriculture and rural services investment, currency devaluation, and the removal of price controls and some protection measures.

Globalization has the potential to have an enormous impact on SSA, a region that has in recent decades had very limited involvement in global markets and trade. Africa leaders are currently exploring avenues for entering global markets, and the World Trade Organization along with powerful trading blocks (i.e. North America and the European Union) are in a position to facilitate entry into global markets for African Nations.

However, whether or not developed nations will revise their own subsidy and trade regulations in ways that will favorably impact SSA remains to be seen. Further, the agricultural policies of rich countries not only make African access to export markets more difficult, but subsidized exports also rob African farmers of part of their own domestic markets.

Further complicating entry into global markets are barriers to trade within the region. Problems with quality standards, labeling and other issues are seriously limiting the capacity for many African nations to participate in global markets. Institutions that can facilitate the establishment of grades and standards that will put products from SSA on par with those produced in South East Asia and elsewhere are necessary. Policy makers, donors and other stakeholders must first address the issue of building capacity in key areas of market development before change can occur.

## KEY ISSUES

It is clearly recognized that markets and trade are critical drivers for economic growth in Sub-Saharan Africa. However, in the context of partially implemented or failed market reforms of the 1980s, and the difficulty African nations have experienced with respect to entry into global markets via trade, several issues arise. First, can market reforms be developed and implemented in full to facilitate growth in agricultural productivity that will result in economic gains for producers? If history is any indicator, market reforms are extremely difficult to effectively implement. This raises the issue of what alternative mechanisms might bring about positive change in output and input markets, supply response, and poverty reduction.

Second, what is required to build the institutional capacity of African nations, such that producers and traders will have effective mechanisms for developing marketing channels, grades and standards, and other mechanisms for ensuring quality and increasing value added? Institutions are emerging as a central issue in market reform.

Third, how can African leaders be knowledgeably and fruitfully engaged in trade negotiations? Capacity building in trade and negotiation skills is needed to enable SSA to actively and fairly participate in WTO negotiations.

Finally, can expansion of domestic markets and increases in regional and global trade be accomplished in a way that is pro-poor? Finding ways to positively impact the poorest segments of rural societies presents an enormous challenge. Market reforms have traditionally benefited those that already have relatively good access to markets, purchase inputs and the like.

## CHALLENGES AND CONSTRAINTS

Perhaps the greatest challenges and constraints for trade and market liberalization have to do with the broader development issues of infrastructure and institutional development. It is widely acknowledged that the development of roads and other efficient networks of transportation, as well as telecommunications and public utilities, are key to the evolution of both input and output markets. Without basic access to roads and other key infrastructure, smallholders may be prevented from participating in markets. The question of how to finance infrastructure development and maintenance is central, and this question is addressed in a later section.

Without institutions to address issues of grades and standards, storage and custodial requirements, and advertising and promotion for key commodities, smallholders may be prevented from participating in both regional and international markets. Problems with quality standards, timing, and assuring adequate supply are penalizing local products in both domestic and international markets. However, the challenges associated with developing strong institutions to facilitate access to inputs and improve the quality of agricultural produce are many. New roles for non-governmental organizations (NGOs), community-based organizations (CBOs) and the private sector are emerging. Whether policy makers in SSA can provide the appropriate incentives to NGOs, CBOs and the private sector to facilitate the development of effective institutions, particularly in remote areas, is a central issue.

In the global context, one of the greatest challenges facing Sub-Saharan Africa is getting developed countries to acknowledge the role that changing their own domestic agricultural policies can play in facilitating the entry of African nations into global markets. Until subsidies for agricultural production in developed countries are decreased or removed, and trade barriers removed, SSA countries will not be able to effectively participate in global agricultural markets. Related to this, the lack of an obvious free trade agreement that would benefit the region is inhibiting the negotiating power of SSA.

## KNOWLEDGE GAPS

Several key areas of trade and market liberalization are in need of further study in SSA. Evaluation studies of market reforms should adopt more holistic approaches to consider the broader impacts on poverty, regional and national economies, outcomes on both the supply and demand side, and what would have happened in the absence of the market reforms. Further studies are also needed of the composition of marketing and transportation costs, and the proportion of these costs that are associated with lack of coordination and access to information. Decreasing transactions costs for both producers and input suppliers is likely to have a significant impact on all stakeholders. Additional studies are also required to identify institutional gaps, and to determine the most effective and pro-poor types of institutions needed to fill these gaps and the measures necessary to stimulate their evolution. Also, more research on the successes and failures of African agriculture could help to identify promising new market opportunities.

Urbanization is proceeding rapidly in SSA due to increasing populations and insufficient agricultural growth. Understanding how urbanization trends in Africa will impact on domestic, regional, and global markets and trade for agricultural products is also very important. There is also need to better understand how urban migration will affect agricultural production. Maintaining access to land for producers who remain in rural areas, ensuring that they have access to needed inputs to maintain or improve yields, and the efficient transportation of their produce to urban markets are central issues. The comparative advantage of farmers both within their own countries and between potential trading partners in the region is likely to become increasingly important. With respect to

globalization, perhaps the most immediate need is capacity strengthening to ensure that SSA country leaders and professionals have the ability to carry out global trade negotiations.

## NEW APPROACHES AND BEST BETS

Future market reforms in SSA are likely to focus more centrally on the development of key market institutions, such as contract farming, voluntary farmer cooperatives, grades and standards, etc. This suggests the movement of market reforms beyond the process of pure structural adjustment. Increased understanding of the role of institutions in market development, and how institutions address market failures and lower transactions costs is allowing policy makers and other stakeholders to look beyond mechanisms such as price liberalization and devaluing exchange rates. Further, increasing information about how transaction costs can impede technology adoption; the evolution of commodity, input and financial markets; and growth of the rural sector is highlighting the importance of reducing transactions costs for both producers and consumers. Defining and promoting new roles for NGOs, CBOs and the private sector may be critical to the development and maintenance of infrastructure and institutions that will facilitate market development and lead to rural growth and poverty reduction.

Research suggests that only 25-30 percent of agricultural products are actually marketed, implying considerable untapped potential for developing domestic markets and exports. But transportation and information bottlenecks will need to be overcome. Interventions that lower market transaction costs and provide producers with additional

risk reduction mechanisms to supplement or replace traditional risk sharing mechanisms like social capital and informal safety nets will be necessary.

Domestic market expansion offers significant potential for agricultural growth in terms of emerging urban markets that are generally characterized by both higher incomes and high-income elasticities of demand for food. Increasing urban populations suggest new opportunities for higher value commodities (e.g. livestock and horticultural products), and value-added products such as potato chips that require processing, packaging and labeling. In addition, because of agricultural growth linkages, any acceleration of agricultural growth rates should also lead to expansion of domestic markets beyond that created by urbanization alone, including within rural areas.

Regional trading agreements within Sub-Saharan Africa may also offer new opportunities for marketing and trade in agricultural products (e.g. ECOWAS and SADC). If countries can work together to promote trade in coffee, tea, cocoa and other high value export commodities, issues such as quality, labeling, and promotion may be much more efficiently dealt with. In addition, regionalization should improve the bargaining power of SSA nations when negotiating at the international level. Considering combinations of traditional and new commodity exports identified on the basis of comparative advantage may be one of the keys to breaking into international markets. Marketing products such as cut flowers, spices and other non-traditional commodities, along side traditional export crops like tea and coffee offer new market entry opportunities. Regional cooperation can facilitate such endeavors.



## **ACHIEVING A TECHNOLOGICAL REVOLUTION TO INCREASE AGRICULTURAL PRODUCTIVITY AND LOWER COSTS OF PRODUCTION**

Panel

John Sanders, Purdue University  
Colin Thirtle, Imperial College  
Derick Brinkeroff, Abt Associates

### **KEY ISSUES**

Increasing agricultural productivity in SSA remains one of the key strategies for improving rural incomes and for reducing poverty. Yet, production growth in the agricultural sector in SSA has been stagnating and in several cases declining. Reversing the trend will require renewed efforts to revitalize agricultural research and extension systems to generate and deliver technologies that meet the needs of African farmers.

New technologies have shown great success in increasing agricultural production in many developing countries; however, Africa has largely been left behind. To increase agricultural productivity in Africa, several issues must be addressed. First, best-fit technologies that suit various agro-ecological zones must be identified. Adapting broad technologies to local conditions and establishing on-farm demonstrations is essential for increased adoption. Second, it is important to understand what factors contribute to technology suitability and adoption, so that research and development systems in Africa are reorganized appropriately to serve the technological needs of farmers. Finally, the poverty reduction benefits of technological changes that also increase agricultural productivity must be demonstrated and documented.

## CHALLENGES AND CONSTRAINTS

Although it is widely understood that improved technology is needed for Africa to pull itself out of poverty, the existing institutional framework of national agricultural research systems (NARS) does not inspire confidence in the poverty reducing potential of the agricultural sector. Despite the fact that past investments in agricultural research have been shown to yield high rates of return, research and development investments have been declining, while several countries in Sub-Saharan Africa have witnessed a decrease in the use of key agricultural inputs like fertilizers. More effort is needed to convince policy makers of the importance of technology-productivity-poverty linkages, but beyond information gaps, it is also crucial to identify other bottlenecks to increased investment as well as devise strategies that will substantially increase the impact of research on agricultural growth and poverty reduction. For example, national policymakers are often weakly connected to NARS researchers, which results in poor support from policymakers in terms of allocation of funds for agricultural research. There is also a need for strategies to strengthen the deteriorating research capacity and research management of the NARS in Africa and to reorganize them to meet changing needs and be financially accountable.

Significant lags are associated with the development of new technologies and farmer adoption. Integrating farmers more fully into the research process may reduce these lags, as may the improvement of extension services, either by strengthening existing institutions or developing alternative extension systems (e.g., using NGOs and community-based farmer networks). While there have been increasing trends toward

devolving extension services to NGOs, this has often not been supported with needed financial resources or with the kinds of capacity building necessary to make this new paradigm operational. More donor support for agricultural research is needed to enable such changes. At the same time, funding agencies need to adopt more realistic impact horizons, and not expect instant outputs from agricultural research.

### KNOWLEDGE GAPS

Because of the long lead times inherent in agricultural research, the budget cuts of the 1980s and 1990s will not have their full impact on agricultural growth rates for several more years. Only substantial and well targeted new investments in agricultural research will be able to help offset these negative impacts. Policy research is needed to develop criteria and tools that will assist policymakers in allocating resources where they will be most effective, including identifying priorities for investment in research and development. There is also a need to develop more effective mechanisms for enabling countries to harness and adapt new technologies developed through international agricultural research.

### NEW APPROACHES AND BEST-BETS

The lackluster performance of agricultural research and extension in Africa points to the need for major institutional reforms. However, several fundamental questions confront the reform process. Do policymakers and NARS have the capacity and willingness to undertake reform measures? Do politicians and NARS have compatible and coherent reform objectives? What is the choice of reform targets – adoption of

particular technologies, increased productivity or poverty reduction? What types of incentives and systems are needed to galvanize reforms and how can they be put in place?

Major institutional reforms needed in SSA include:

- Strengthening the capacity of NARS to undertake cost-effective, demand-driven research that leads to technologies that contribute to higher agricultural productivity and rural incomes and poverty reduction.
- Increasing the attractiveness of investing in agricultural research by government, donors, farmers, and the private sector.

Several promising approaches could contribute to the success of an institutional reform strategy. First, establishment of competitive grant schemes at the regional and national levels could promote increased competition among researchers for funds and provide performance-based incentives and accountability. Second, increased reliance on user-based financing of some kinds of research could increase the sustainability and accountability to users of research funding. This might include co-investment mechanisms where public funds are conditioned on inputs from users. Third, multi-year financing is essential to provide some needed stability in the funding of long-term research programs and projects, and to enable NARS to undertake strategic planning and institutional strengthening. Some core public funding must be assured with regular disbursement from national budgets. Fourth, there is a need to forge, strengthen and institutionalize linkages between researchers and research users in priority setting, conducting research and evaluating results, perhaps through established partnerships with farmers' organizations. Linkages with trade associations and private firms could also be beneficial. Fifth, decentralizing NARS and providing revenue retention authority may

increase institutional autonomy and flexibility and spur competition among individual research units. Finally, providing management training and rewarding leadership and commitment are likely to enhance the success of national agricultural research systems.

Attaining renewed support for NARS will require building new partnerships between key stakeholders, including political leaders, farmers, NGOs and scientists. NARS will also have to reform and demonstrate that they can deliver the kinds of technologies that farmers demand, and that contribute to growth and poverty reduction. This will require giving farmers greater say in setting research priorities and in evaluating new technologies.

On its own, the private sector is unlikely to undertake most of the research needed in SSA, including productivity enhancing biotechnology research. There are few opportunities for private sector firms to recoup their investments in Africa specific research. Consequently, the public sector must continue to play a key role, either by undertaking the research itself or by funding others to do it. Publicly funded research is especially needed on post-harvest technologies, soil conservation and improvement, and biotechnology.

Even with potentially successful technologies, input delivery systems and rural credit institutions have traditionally been difficult to develop and have inhibited technology adoption in SSA. Therefore, comprehensive development strategies that look beyond simple technology development to address barriers to adoption are critical.

## **BUILDING THE LEVELS OF PUBLIC INFRASTRUCTURE AND HUMAN CAPITAL NEEDED FOR SUCCESSFUL RURAL GROWTH**

Panel

Peter Hazell, Environment and Production Technology Division, IFPRI  
Ashok Gulati, Markets and Structural Studies Division, IFPRI

### **KEY ISSUES**

Infrastructure and rural services are central to agricultural development. They not only expand opportunities for growth, but also help ensure that such growth is more diffused and equitable. Without the means to connect rural areas to market centers, farmers cannot procure sufficient fertilizers and other inputs at prices they can afford, nor can they market their own products effectively. In the absence of good infrastructure, market reforms can drive a greater wedge between those living in remote regions and those who are well connected by infrastructure, often with the former retreating into subsistence farming. Similarly, poor access to health and education services diminish agricultural productivity and can lock rural people in a poverty trap.

But not all types of infrastructure yield the same benefits, nor are the benefits equal across different types of areas. IFPRI research in China and India shows that agricultural research has the largest productivity returns, followed by investments in education and rural roads. These three investments also have very favorable impacts on poverty reduction. The marginal returns vary significantly by region and many investments, including agricultural research, rural roads, telephone access, and education give some of their highest returns in the less-favored regions, for both growth and poverty reduction. Contrary to conventional wisdom, additional investments in irrigation

have little impact on growth and poverty reduction. Returns to education and roads are particularly high in the poorer rainfed, rather than irrigated areas. Reinforcing these findings is a World Bank study that also points to a strong association between education and agricultural productivity.

The results for China and India are indicative of what might be anticipated from infrastructure investments in Africa. Given the low levels of infrastructure currently available in SSA, the marginal returns to these investments can be expected to be large. Sub-Saharan Africa is particularly deficient in rural road networks. Countries like Uganda show concentrated areas of high connectedness interspersed with large areas of minimal road structure and access to markets. Comparing Africa to India in the 1950s, there is a significant gap (about 6:1) in road density, and which has widened over time.

## CHALLENGES AND CONSTRAINTS

The difficulty of researching the potential agricultural growth and poverty reduction impacts of infrastructure for Africa lies in the lack of good time series data. Instead, estimations will have to be based on cross-sectional studies, and investments made in establishing baseline data for future research. Per capita investment costs of roads are expected to be high for Africa. One estimate is \$20,000/km. Low population densities and low levels of economic output in many parts of Africa compared to Asia also lead to much higher per capita investment and maintenance costs and fewer opportunities for local financing of rural infrastructure investments. Estimates of the returns to infrastructure investments in SSA should also include non-agricultural benefits, like those associated with health, education, and reduced conflict.

It is also important to consider the actual and potential costs of NOT investing in agriculture, which include:

- Higher food prices due to higher transport costs.
- Increased migration to urban areas, even when there are insufficient jobs and infrastructure to accommodate large influxes of workers, leading to potential political instability. This has happened in some Latin American countries.
- Less foreign and domestic investment in value-added agriculture (e.g. milling, processing, packaging). Such commercial activities have done well in Namibia and South Africa because of investments in improved infrastructure.
- Continuing information gaps about markets and market conditions. For example, the price of fertilizer was recently found to be 30 percent higher in Uganda than neighboring Kenya, a much larger gap than can be explained by market and transport costs.

Developing and maintaining rural infrastructure in SSA requires not only financing, but also changes in institutional structures to provide effective regulation of markets, improved information flows about market conditions, and better mechanisms for empowering the poor to have a greater say in technology generation and dissemination and in policy formulation. In the process of establishing institutions, it is important to start with the simple and basic and upgrade gradually, though identifying the right formula for sparking dynamic institutional evolution is not easy.

In most of Sub-Saharan Africa, central governments play the dominant role in financing, building and maintaining infrastructure, resulting in investments that can be costly, inefficient, and of limited accountability to users. Whereas governments often place priority on building all-weather roads for trucks, more value and poverty alleviation may be generated by investment in unpaved access routes suitable for livestock transport, priorities that are more likely to be articulated by local farmers. Unbundling



infrastructure construction and maintenance will require defining and devolving roles to different levels of government, the private sector and local communities. Although the private sector may offer many efficiency advantages, they often lack incentives to operate in more remote or less-favored areas where returns are low. Likewise, where population densities are low, local governments or the private sector may be unable to raise sufficient funds to finance adequate levels of infrastructure investments. Therefore, central governments and their donors will need to continue to play a lead role in financing infrastructure in these zones, even if implementation is carried out locally. Government oversight is also needed to avoid potential problems associated with cost overruns, quality and transparency.

## NEW APPROACHES AND BEST-BETS

Concentrations of road networks tend to be associated with dual development strategies. Farmers located along or near roads are well connected to markets and tend to prosper while those living further away have limited access to inputs and markets and remain largely subsistence oriented. Market liberalization policies and the removal of parastatals have reinforced such dualistic development patterns in some African countries. Further research is needed to evaluate the potential returns to different types of infrastructure investments for growth and poverty reduction in different types of regions in Africa. The India and China results mentioned above are encouraging, but do not necessarily have relevance for Africa.

In many cases, existing community-based institutions are prime candidates for governance of infrastructure development and maintenance, though state support is likely

to still be needed for financing, and possibly to assist with governance in the early stages if a strong institutional base is lacking. Furthermore, for infrastructure that generates substantial public goods, one cannot rely solely on community investment, even where communities can muster the necessary financing. Three studies conducted by IFPRI testing the impact of institutional arrangements on projects allocating water to agriculture and constructing public works found that in no case do high levels of community involvement impair project outcomes (in terms of being on-time and on-budget), while in many cases community involvement improves them by reducing transaction costs and increasing transparency. At a minimum, establishing priorities for investment in rural infrastructure should start with eliciting the opinions of local people.

For local governance and service provision to work effectively, there is need for clearly defined roles, local capacity, performance incentives, transparency and accountability, as well as a means for generating the necessary resources to pay for the service. Moreover, the capacity for locally driven development is limited unless local systems of public finance are in place and there is adequate capacity to manage development funds. In some areas, contract farming has been found to be an effective institution for providing extension services because it generates the necessary incentives and resources. Successful decentralization demands that national and local leaders have a long-term vision for their country, a key-enabling factor for Asia's success in developing their infrastructure system.

Microfinance institutions have been shown to be an effective mechanism for providing needed credit for entrepreneur activities and to smooth the seasonal

consumption patterns of the poor. Microfinance schemes that have been built on local knowledge and practice, such as the use of local savings schemes and revolving credit mechanisms, have a good record of success. But microfinance institutions have largely shied away from lending for farming activities, leaving small-scale farmers with limited access to agricultural credit. Given their widespread networks and established relationships with producers, traders also have comparative advantages in delivering rural financial services, though institutions need to be developed for regulating their activities.

Education is also seen as a key poverty alleviation tool. A World Bank study in Uganda demonstrated that education has a considerable effect on agriculture productivity. At the farm-level, non-formal training may be the most effective, including training for farmers and women's organizations to develop technologies and carry out their own agricultural research. There is also a need for formally trained agricultural researchers and extension workers, though investments in training are lost if incentives are not in place to retain people. Such mechanisms as competitive research grants for studying and undertaking research locally offer possibilities. More people could be reached by expanding training modalities, e.g. information technology (IT)/distance learning models.

## **MAKING AGRICULTURAL GROWTH MORE EQUITABLE**

Panel

Lawrence Haddad, Food Consumption and Nutrition Division, IFPRI

Mike Weber, Department of Agricultural Economics, Michigan State University

Simeon Ehui, Livestock Policy and Analysis Program, ILRI

### **RECENT DEVELOPMENTS**

Issues related to land tenure and land reform are currently central to the debate surrounding equitable growth in agriculture. In Sub-Saharan Africa many countries are in a much better position today to effectively undergo changes in methods of land acquisition and redistribution, including taking advantage of opportunities for developing land lease and sale markets. In the post-colonial political economy of the late 1970s and early 1980s, there was less potential for land related reforms and market development. Privatization or the individualization of land is becoming increasingly common, particularly in areas where population pressure is high and market access is relatively good. In addition, some countries are witnessing increasing degrees of devolution and decentralization of land tenure and natural resource management (for example, Mauritania, Niger, Tanzania, and Ghana). Several countries are currently facing intense pressure for land reform (e.g. Zimbabwe and South Africa). How these land reforms are undertaken, and their effect economically, socially and politically has enormous potential to influence asset portfolios (both positively and negatively), particularly those of the poor and disenfranchised. The limited success of market-assisted land reforms (for example South Africa) should be noted.

Increasing populations are also a central issue to the problem of making agricultural growth more equitable. Population growth reduces per capita availability of resources, in particular land. Continual subdivision of farms as a result of increased population density means is causing many farms to become too small to provide adequate livelihoods. This is in turn leading to increased dependence on low productivity non-farm activity. Migration to lower population density rural areas or urban areas may often have to be an important part of the answer to the problem of population pressure and land scarcity and fragmentation.

HIV/AIDS is an issue that cuts across economic, social and political spheres in Sub-Saharan Africa. It is significantly impacting agricultural productivity and household assets of social, human, and natural capital. The current political environment in most SSA countries does not provide a forum for dealing with issues related to education, health care, and access to drugs that would alleviate the effects of HIV/AIDS in rural areas. Getting the HIV/AIDS issue on the agenda of policy makers and other stakeholders is critical if current levels of agricultural productivity are to be maintained or increased.

## KEY ISSUES

There is general consensus that small farmers will need to be integral to the growth of African agriculture in years to come. However, finding ways to ensure that growth is pro-poor and benefits the poorest of the poor, disenfranchised members of society, and those affected by HIV/AIDS and other shocks is a challenge. One of the major opportunities to move people out of poverty is to increase their asset base. In this context several issues arise. There is a need to know where vulnerable groups are

located, how they can be identified, and whether or not the targeting of vulnerable groups is the way forward? The question of how to identify and target poorer households in rural communities without disturbing important safety nets built into social infrastructure, which may sometimes be unequal, is important. With respect to land, the question of what role land inequality plays in creating heterogeneity among the rural poor and impeding their capacity to escape poverty is raised. For example, in the case of a household affected by HIV/AIDS, where a widow is left to head the household – whether or not she is permitted to take ownership over the land that her family has farmed has critical implications for the household's asset base. Understanding the importance of land as an asset and the impact it has on rural livelihoods has implications for how to proceed with various land reforms. Finally, finding mechanisms for improving the social, physical, and natural capital assets of the rural poor to generate more equitable, welfare-improving outcomes is a key issue. The roles that governance, democracy and civil society have in improving asset bases in rural communities are central to these issues.

## CHALLENGES AND CONSTRAINTS

Sustained growth in agricultural incomes will be most important to the poorest segment of the rural population. However, the most vulnerable of the rural population are often landless and lacking in other productive resources. This inhibits their ability to respond positively to growth incentives. Heterogeneity at all levels (including within and between countries, communities, and households) raises the issue of targeting. There are several ways to direct agricultural growth that is pro-poor – geographically, by magnitude of vulnerability, existing asset base, future potential – but which of these targeting

mechanisms is the correct one? Better understanding of the links between labor and land markets may facilitate interactions and technology transfers between the better off and poorest individuals. Dynamic labor markets exist in Africa, but understanding the intersections between labor and land markets is difficult.

HIV/AIDS and its impact on both labor and land productivity is a significant constraint to making agricultural growth equitable. Developing institutions, including those for credit, micro finance, management of natural resources and others are particularly difficult in an environment where mortality is very high and there are few incentives to undertake initiatives with a medium to long-term planning horizon. Though HIV/AIDS crosses over socio-economic lines, the asset bases of the poor are most significantly affected when households are affected by HIV/AIDS.

Understanding the most effective institutions/mechanisms for smallholder farmers to organize for effective political bargaining is also a major challenge to promoting equitable agricultural growth. Women and other commonly disenfranchised groups face significant social and political barriers to organizing. Finding mechanisms for civil societies to evolve, particularly in remote areas that are less likely to be affected by growth incentives, have implications for how the benefits of agricultural growth are distributed. In particular, disenfranchised groups need to have a voice in policies and local initiatives that deal with food crop production, land reform and other key issues.

## KNOWLEDGE GAPS

There are several success stories of high value or value added commodities such as milk and poultry that have acted as drivers of development. In many cases these

successes are not land intensive and are generally gender-neutral technologies. This presents opportunities for pro-poor development. However, more analysis of the successes is needed. What types of institutions did they require, how much asset transfer was involved, and can they be replicated and adapted, are important questions. In addition to on-farm opportunities, more research is needed on how pastoralists will be affected by agricultural growth. Mechanisms for linking farm activities with pastoral activities and non-farm activities in rural areas are likely to enhance the benefit of rural interventions. Pastoralists are an important group in SSA that need to be included in discussions about agriculture sector strategy.

More research and information on the impact of HIV/AIDS on agricultural productivity and asset bases is needed. The most affected populations in rural areas need to be identified. There is need for more information and technology on the production of crops with high nutritional value that are less labor intensive than traditional crops.

## NEW APPROACHES AND BEST BETS

There is no one-size fits all approach for making agricultural growth equitable. It is likely that each community will have site-specific characteristics and a high degree of heterogeneity. The comparative advantage of various livelihood strategies that will benefit smallholders and those that are dispossessed is a key issue. For sustained agricultural growth, long-range goals as well as focusing on short run welfare gains should be considered.



Awareness of the role of property rights for land and other natural resources and the development of effective institutions for the management of social, human, and natural capital is increasing. Community-led natural resource management that leads to greater equity in the use of common pool resources is identified as a promising mechanism for promoting equitable growth in the agricultural sector. Shifts away from common property systems to more individualized tenure and land markets can generate negative equity consequences for land and natural resource distribution, though land rental markets may help offset this for land-poor farmers.

There is also evidence that higher levels of community participation and involvement of stakeholders in project planning and development leads to larger total benefits as well as to more equitable outcomes. Studies originating both from Africa and Asia have shown that programs and interventions supported by NGOs and community-based organizations are generally more successful than government-led projects. However, in some countries (e.g. Uganda), community-based organizations and NGOs tend to be less concentrated in more remote areas indicating that less-favored areas may be in need of additional investment in building institutions that support community-led development and high degrees of participation from stakeholders.

The integration of HIV/AIDS education into agricultural projects and capitalizing on expert practitioners available in the fields of public health and education could impact the spread of HIV/AIDS. This will in turn have significant implications for land and labor productivity.

Rental and sharecropping markets hold particular promise for equalizing land assets among different socio-economic groups. In addition to benefiting the poor by increasing access to land through rental and sharecropping markets, efforts to involve the disenfranchised in community-led development (including natural resource management) with the goal of promoting equity in the local allocation of common pool resources is important. For the landless, facilitating the development of labor markets and investing in human capital to increase incomes also offers enormous potential to increase assets.

Future opportunities for making agricultural growth more equitable should rely heavily on enfranchising stakeholders at all levels. Decision making on research and policies for sustained and equitable growth in agriculture needs to be informed by the landless, pastoralists, smallholders, rural entrepreneurs, non-farm laborers, NGOs, donors and others. This will require enhanced collaboration between donors and local partners to strengthen local government's role in empowering rural households. Civil society should have a strong voice in the development of the agriculture sector.

## **REVERSING THE DEGRADATION OF NATURAL RESOURCES WHILE ALSO ACCOMMODATING GROWING RURAL POPULATIONS**

Panel

John Pender, Environment and Production Technology Division, IFPRI  
John Sanders, Purdue University

### RECENT DEVELOPMENTS

Agricultural productivity is hindered by the proximate or direct causes of land degradation in SSA which include farming on steep slopes, limited fallow or vegetative cover, deforestation, overgrazing of rangeland, limited soil and water conservation measures, and low levels of use of both organic and inorganic inputs. Soil nutrient losses in many parts of SSA are among the highest in the developing world, and yields have been stagnant or declining for the past two decades, with cereal yields being less than one ton per hectare in many parts of SSA.

In addition to increases in the intensity of the direct or proximate causes of land degradation throughout many regions of SSA, there are several underlying issues that contribute to land degradation. Population growth for example, has resulted in declines in average wealth, food availability, and ability to cope with drought in Ethiopia. It has reduced the use of fallowing, manuring, and investments in soil conservation technologies such as soil bunds. Limited access to infrastructure, markets, and credit results in high cost of fertilizers and other inputs, and their low rates of use. Insecure land tenure systems inhibit long-term investments in soil-fertility enhancing investments. Poverty has similar implications - poor people generally have high rates of time preference and are unwilling to invest in soil and water conservation technologies where

benefits will be realized only in the medium to long-term. Landlessness and land fragmentation result in expansion of agricultural production into marginal and fragile lands resulting in deforestation.

In general, unlike South and South East Asia, gains in reducing the impact of these underlying causes of land degradation have been limited during the past 20 years. Population growth remains a significant issue throughout SSA, investments in infrastructure to facilitate input and output markets have been very limited, and poverty remains a persistent and worsening problem in many parts of the region. In addition, reduction in the productivity of the rural labor force due to HIV/AIDS has emerged as a major constraint to agricultural development in Sub-Saharan Africa. Climate change has also emerged as an issue with significant implications for natural resource management. Decreases in cropping area for key agricultural export crops due to rising temperatures, desertification, and declining water levels are among the problems associated with climate change.

## KEY ISSUES

Land degradation and the unsustainable use of natural resources are limiting the potential for agricultural development in Sub-Saharan Africa. Growing populations and continued low levels of input use exacerbate the problem. Finding mechanisms for smallholders to take advantage of existing technologies for sustainable land management is one of the key issues to be addressed. A wide variety of technologies for reducing land degradation and improving yields are available for the various agro-ecological conditions in SSA. The pressing question is how to deliver these technologies to farmers. The

successful delivery of land management technologies to farmers will likely depend on mechanisms for information exchange beyond conventional agricultural extension services. NGOs, CBOs and the private sector have important roles to play in both service and input delivery.

In addition to finding mechanisms for getting information and inputs to smallholders, institutional reforms are needed to create better incentives for rural people to sustainably manage their resources. In several Sub-Saharan African countries, the state has become increasingly involved in trying to regulate and manage natural resources, often generating negative environmental consequences and increasing incentives for resource degradation. Community-led initiatives may offer greater promise, but they too have several associated challenges. Understanding the trade-offs between achieving agricultural growth and preserving the natural environment of Sub-Saharan Africa is a major issue facing policy makers.

## CHALLENGES AND CONSTRAINTS

Growing populations will continue to increase landlessness and land fragmentation throughout the region. Finding solutions to deal with population pressure in population dense areas presents a challenge. Migration is one possible solution to ensuring that people have access to land. Migration to urban areas in response to land fragmentation and landlessness is already taking place. The long-term consequences of migration to both rural and urban areas are not known.

Limited access to infrastructure, markets for key inputs that mitigate land degradation, and credit are major constraints to achieving sustainable land management.

Poor farmers have short planning horizons, making medium and long term investments in soil and water conservation technologies unattractive, and encouraging unsustainable use of natural resources such as water and forests. Addressing infrastructure development may be necessary to ensuring access to credit, productivity enhancing inputs, and mechanisms such as extension services for promoting soil and water conservation technologies.

## KNOWLEDGE GAPS

In general a better understanding of the trade-offs between development strategies and resource use is required – for example, road development may promote growth in agriculture, but may simultaneously lead to increased deforestation. Understanding and acknowledging the potential trade-offs between agricultural growth and natural resource management is very important. Integrating environment, poverty, and agricultural productivity goals into broader development strategies is likely to help in managing the tradeoffs among these goals. In addition, research is needed to identify site-specific technologies, and to develop effective institutions for demonstrating and promoting technologies to farmers. Identifying mechanisms for the replication of successful technologies will be key to achieving wide scale sustainable land management.

## NEW APPROACHES AND BEST BETS

There is increasing evidence that relieving population pressure is critical to reducing natural resource degradation. The induced innovation paradigm (i.e. more people less erosion) does not hold in many cases. Developing non-farm activities may be

a key livelihood strategy for reducing the negative effects of population on the environment – particularly in population dense areas where access to land is limited. In addition, effective livelihood strategies for less favored areas that incorporate natural resource management are urgently needed; however, they must be linked to comparative advantages of these marginal areas.

Several existing land management technologies are under-exploited and have the potential to benefit many African farmers. Among these are soil bunds, optimal manuring/fertilizer use combined with water conservation technologies, tree planting, use of improved seed, small-scale irrigation and others. For example, small-scale irrigation has been very limited in Sub-Saharan Africa. In some areas it may have the potential to contribute to production of high value crops while reducing pressure to expand cultivation. The use of chemical fertilizers is also higher in irrigated areas complementing water use in increasing the productivity of crops. However, these technologies need to be tailored to meet local needs and constraints. Different land management technologies and practices have varying potential within and between communities. Once appropriate technologies are identified effective institutions for demonstrating and promoting technologies to farmers are essential. Capacity strengthening of farmers will be key to sustainable land management.

Government, NGOs, CBOs, the private sector and individuals all have a potential role in the dissemination of information on technologies that will lead to improved land management. In general, strong community based institutions offer the greatest potential for the exchange of information on new technologies. Strengthening farmer organizations

and other CBOs will facilitate innovation and adoption of natural resource conservation technologies. NGOs also have significant potential to have a lasting impact on land management through the development and dissemination of land management technologies. However, establishing frameworks such as NGO forums that ensure that the messages delivered by the NGOs are appropriate and consistent are required. Many NGOs are in a unique position to provide feedback to researchers and policy makers on what technologies and methods of information dissemination are working in the field – this type of dialogue should be facilitated. It should be noted that although NGOs and CBOs offer the greatest potential as institutions for addressing the proximate and underlying causes of land degradation, many less-favored areas have very few of these types of organizations and rely on government for service provision. This fact should not be overlooked.

New and emerging technologies such as geographic information systems (GIS) and biotechnology also offer opportunities for better management of natural resources. Remote sensing and GIS tools allow for empirical analyses of land use change over time and in a spatial context. Biotechnology research has shown that high value commodities for export and food crops can potentially reduce external input needs. For many regions of SSA that are dependent upon one or two staple crops that suffer from pests and diseases, new crops that offer resistance have enormous potential implications for food security and rural livelihoods in general. As food security and incomes improve, farmers will be more likely to invest in natural resource management technologies.



Emerging markets for ecosystem services have the potential to be of enormous benefit to rural people in Africa based on the principle that incomes can be generated from the sustainable use of natural resources (as in the case of ecotourism, the sale of non-timber forest products, etc.) or with productive activities that are likely to simultaneously improve land quality while facilitating the preservation of existing natural resources (as is the case with carbon sequestration through tree planting activities). However, it is important to note that developing markets for ecosystem services will present many of the challenges that more traditional markets face including requiring access to roads and other infrastructure, institutional requirements of third party verification, and establishing financial systems to pay farmers for ecosystem services (particularly in the case of carbon sequestration).

## SUMMARY

### **FUTURE OPPORTUNITIES IN RURAL AFRICA – WHAT WE KNOW AND THE ROAD AHEAD**

Eleni Gabre-Madhin, Markets and Structural Studies Division, IFPRI

The panel presentations at the workshop highlighted several of the key issues that will affect the future of agriculture in Africa and identified some of the most promising opportunities for future growth that benefits the poor and protects the environment. Key to achieving such outcomes are the farmers and other members of the rural population that have the potential to utilize their human, physical, natural, financial and social capital to its greatest potential. We know that there are linkages between farmers and markets and trade, technology, environment, and infrastructure, but these linkages have not been exploited to their full capacity.

With respect to markets, the lack of supporting institutions for market development (for example, quality control, enforcement, and information), inadequate infrastructure (transport, communications, and storage) and inadequate policy commitments have hindered supply response despite gains in market efficiency. Addressing institutional issues in particular is likely to lead to gains in market efficiency. The greatest market opportunities for growth are increasing urban markets, regional markets, and global niche markets (for example, markets for high-value and eco-friendly commodities), as well as processed goods for domestic markets. For greater trade volume from the region, there needs to be harmonization of macro and sectoral policies; development of appropriate and efficient regulatory, legal, and financial institutions;

market access promotion; and investment in human capacity for negotiations and analytical capacity with respect to international trade negotiations.

Technology and the dissemination of technology are key issues for developing agriculture in Sub-Saharan Africa. Investments in agricultural research and technology have declined throughout the region during the past two decades despite strong evidence of high returns to investment. Of the research that is taking place, very little of it is market-driven. There is currently a serious disconnect between farmers' needs and the research agenda of both national and international agricultural research centers. Lack of donor commitment to funding both agricultural research and long-range projects is further hindering agricultural research systems in SSA. In addition, donors are not harmonized in their approach to funding national agricultural research organizations.

The lack of effective extension and credit systems to deliver technologies to farmers is a serious problem. Government run agricultural extension services are suffering in a number of countries, and the government devolution of agricultural extension services to NGOs, CBOs and the private sectors may increase the disconnect between farmers and agricultural researchers.

Development of infrastructure is likely to be one of the cornerstones for promoting agricultural growth. Identifying the right priorities for infrastructure investments in Africa requires more research. Investments in roads, telecommunications, education and agricultural research yield high payoffs in terms of growth and poverty alleviation in China and India, and there is every expectation that they would do so in SSA too. Roads are critical for moving goods to market and for the flow of goods,

productive inputs and information into rural communities. However, the types of roads that are needed in rural Africa should be carefully evaluated. Given low population densities in many regions, investment in all weather roads in many regions may not be affordable or necessary. Establishing seasonal roads would decrease the costs of establishing and maintaining roads considerably. Community-based organizations willing to contribute to the financing, construction and maintenance of such roads offer new opportunities for their development as well as other infrastructure and services in SSA. However, for significant development of infrastructure, institutional gaps such as grade and standards regulations, information about the type of roads and other infrastructure, increasing transparency of local government, development of public rural finance, and farmer organizations need to be addressed.

With respect to making agricultural growth equitable, several pathways out of poverty have been identified. The issue of targeting is complicated and requires further research. Asset accumulation (e.g. access to land and other assets) is central to equitable growth.

Cross-sectoral linkages, improving market access (especially for less-favored areas), reducing population growth, improving technical assistance to rural areas, and reducing the vulnerability of poor people to transitory shocks as well as HIV/AIDS, are important pathways out of poverty.

Agricultural development in Sub-Saharan Africa is being adversely impacted by the deteriorating condition of many natural resources. Sustainable land management and the sustainable use of natural resources are likely to lead to improved agricultural output

and incomes. Population growth is leading to declines in land and resource conditions in many regions of SSA. The inefficiency of governments and government programs that deliver information about soil and water conservation is also hindering sustainable land management. Lack of enforcement capacity by regulators that enforce national by-laws and land use restrictions are leading to the unsustainable use of natural resources, particularly common pool resources. However, several factors are contributing to sustainable resource use. Improved market access is allowing farmers in some regions to obtain inputs such as fertilizer that improve crop productivity and replenish soil fertility. Technologies such as small-scale irrigation also have the potential to improve land management. Finally, the presence of NGOs, and strong collective action in communities (i.e. social capital formulation), has a positive impact on natural resource management in many regions of SSA.

Several key themes emerged from the panel presentations and discussions over the course of the workshop, including the need to broaden participation, redress institutional gaps, and build upon existing yet underutilized linkages. It seems clear that smallholders and others in rural communities can play a much greater role in technology development and diffusion, infrastructure delivery, and natural resource management. Top down approaches have had very limited success and a fresh approach that highlights the participation of stakeholders at all levels is likely to prove more successful. Institutional gaps seem to be the common problem in almost all aspects of agricultural development. Facilitating the development and maintenance of regulatory, information, governance and coordination institutions – especially those that involve smallholder

participation -- may be central to developing agriculture in SSA. Finally – acknowledging and building upon existing linkages is necessary. There is much information to be exchanged between all stakeholders. Ignoring the potential gains from researcher/farmer, or NGO/researcher dialogues will not lead to gains in agricultural productivity.

Methodological issues remain. Further research is needed on how to measure the impact of market reforms on agricultural growth and poverty reduction, how to measure payoffs to infrastructure investments, how to target investments in agriculture within smallholder communities, and how to build social capital. These questions are central to understanding how to facilitate agricultural growth in Sub-Saharan Africa.

## **USAID AGRICULTURAL INITIATIVE TO CUT HUNGER IN AFRICA**

Jeff Hill, USAID

The United States Department of Agriculture (USDA), the Food and Agricultural Organization (FAO) and the Associates for International Resources and Development (AIRD) are projecting Africa's share of world hunger to increase to at least 21 percent (AIRD, 2001) and at most 73 percent (USDA, 2000) by 2015. In 1996-1998, 33 percent of Sub-Saharan Africa's population was hungry while Asia, including China and India, Latin America and the Caribbean, and Near East and North Africa were experiencing only 15 percent, 11 percent and 9 percent, respectively. In 2000, approximately 125 million people were hungry in Africa. Nevertheless, the number of incidences throughout this region is disproportional. The largest pocket of hunger is in east and central Africa where 62 percent of all Sub-Saharan Africans are hungry. Within these regions, 46 percent of the population is hungry. Twenty-three percent of SSA's hunger is in west and central Africa and 15 percent is in southern Africa. However, the proportion of southern Africans that are hungry is 42 percent.

USAID has projected that the potential impact of additional annual allocations of US\$600 million for agriculture, US\$461 million for food aid, US\$246 million towards stability and openness, US\$105 million for education of females, and US\$85 for rural infrastructure over existing budgets would reduce the number of hungry people in Africa by 115 million by 2015, with the largest reduction occurring through interventions in agriculture. However, with the expected rise in population, this will lead to only a slight

decrease in the number of food insecure people. But without this type of intervention, it is projected that slightly more than 200 million Africans will be hungry in 2015.

Therefore, it is essential that collective efforts for investing in agriculture, health, education, peace, and infrastructure be made.

An agricultural investment of US\$600 million is projected to reduce the number of hungry people in SSA by 51 million. How is this possible when African agriculture is a marginal player in world trade, its terms of trade in agriculture have declined, and world agricultural prices have declined? To understand this large impact on hunger from agriculture investment, the linkages between agriculture, economic growth, and hunger need to be understood. Data from 1999 indicate that the areas with the highest incidences of hunger (undernutrition) are the areas in SSA that have the lowest per-capita agricultural GDP and per-capita GDP. Per capital growth of food production in Africa has been sporadic over the past four decades, with per-capita growth for southern and eastern Africa in 2000 registering even below levels in 1961. Low purchasing power accompanied by low crop yields and rising population lead to more hunger.

The following evidence shows agriculture's potential as an engine of economic growth and poverty reduction in Africa:

- On average, about 40 percent of Africa's export earnings are from agriculture. At least 70 percent of the labor force is employed in agriculture, which contributes over 30 percent to total GDP. Approximately 80 percent of the poor and undernourished live in rural areas and depend on agriculture for food and income. A one percent increase in per capita agriculture GDP could effectively raise per capita incomes of the bottom quintile by about 1.6 percent. Agricultural growth decreases poverty and malnutrition by raising incomes and employment from the production of non-tradable commodities (e.g. food staples). Yield increasing technologies can have a multiplier effect of about 2 to 3 times the initial agriculture growth rate on overall economic growth.



- The adoption of yield increasing technologies raises labor employment in agriculture activities and increases demand for other non-agriculture (mostly domestic) goods and services.
- Agricultural productivity growth can reduce child malnutrition at a rate of about half the original productivity growth rate.
- A 100 percent increase in agricultural productivity has the potential to raise per capita GDP by 58 percent. Agricultural productivity growth has almost as much of an impact on poverty reduction as per capita GDP growth.

This evidence suggests that agricultural investments are poised to have a positive impact on hunger in SSA. Given the current low level of investment, efforts is required to communicate such evidence to donors and policymakers. Recognizing the central importance of agriculture in eliminating hunger and poverty in SSA, USAID has launched a major agricultural initiative for SSA. The primary goal of the initiative is “to help significantly reduce hunger and poverty in Sub-Saharan Africa and ensure food security for future generations.” Its primary objective is “to rapidly and sustainably increase agricultural growth and rural incomes in SSA.” The first draft of this strategy sets out three measures to assess the progress of initiative, level of household incomes, number of undernourished people, and the level of new resources committed to agriculture by other donors, African governments and the private sector.

The implementation of the strategy revolves around three questions:

1. What countries should be the focus of USAID efforts?
2. What products and commodities have the potential to drive agricultural growth and reduce hunger?
3. What approaches and interventions will have the greatest impact on smallholder- based agricultural growth and rural incomes?

The first step is to select the priority countries that will receive additional funding from this initiative. In selecting countries, USAID considered four options for focusing where the agricultural initiative would be implemented:

1. Scaling up investments in existing bilateral agriculture portfolios (currently 17 countries);
2. Targeting additional funding to six to eight ‘high priority’ countries, regardless of distribution across Africa;
3. Targeting additional funding to a few ‘high priority’ countries within each sub-region (east, west, and southern Africa); and
4. Targeting additional funding to a few ‘high priority’ countries within each sub-region (east, west, and southern Africa), but with complementary regional programs to promote growth and to reach the vulnerable.

The fourth option was selected. USAID then used other key criteria such as agricultural economic structure and performance; enabling environment; and strategic importance to select the nine priority countries to focus the agricultural initiative efforts. This first selection resulted in equal distribution of countries across regions with Uganda, Kenya, and Tanzania from east and central Africa; Nigeria, Mali, and Ghana from west Africa; and South Africa, Mozambique, and Malawi from southern Africa. The program will further embrace sub-regional challenges such as increasing the efficiency of intra-regional trade; developing a framework to borrow and share knowledge, capacity, technology, and infrastructure; and creating information systems to access global markets and knowledge systems.

USAID plans to select a basket of goods and services (crop, livestock, and environmental products) for investment according to their perceived ability to drive agricultural growth. This basket needs to include dominant commodities for local

consumption and export, options for diversification, and new products that will enable Africa to be competitive. However, workshop participants noted that there are several factors that could affect the investment performance of this commodity basket. These include consumer demand, productivity increases, value added potential, share of population engaged in production and consumption of various products, and profitability.

Six potential areas for USAID intervention are technology applications, agricultural markets and trade systems, community-based organizations, human and institutional development, addressing the market and service needs of vulnerable groups, and sustainable environmental growth. Interventions in technology application could include technology systems and applications that support agricultural growth and economic transformation; programs that develop and promote broader access to and use of biotechnology; global, regional, and national alliances among technology partners; and GIS and information technology system development. Some expected results from interventions in technology application are increased agricultural productivity, off-farm employment and enterprise opportunities, and strengthened capacity. For these results to come about, new research institutes and systems may need to be established to enable the adoption of new technologies and frameworks.

Interventions in agricultural markets and trade systems could include policy analysis and formulation; establishing grades, standards, and certification systems; building capacity; and developing financial and trade information systems. These interventions are expected to increase the efficiency of trade systems, improve

competitiveness of African agriculture goods in global markets, and increase trade volume.

To enhance the impact of this initiative, collaboration with community-based organizations is necessary. Some community-based interventions could include strengthening producer organizations to offer services and establish links to markets, developing more agriculturally oriented micro-enterprises, and promoting agribusinesses. Another suggested intervention is strengthening the capacity of farmer organizations to provide inputs and market delivery services and to provide a forum for policy and research advocacy. That is, community-based organizations can play a strategic role in setting the agenda.

In order for the agricultural initiative to be successful, human and institutional capacity both need to be strengthened. Unless local capacity is strengthened, the results achieved by this initiative are likely to be unsustainable. Specific interventions envisioned are graduate degree training, management and leadership development, agricultural high school curriculum development, and competitive and sustainable financing system development. It is expected that these interventions will lead to a more prominent and effective role by African leaders in formulating, managing, and technically supporting a strategic agenda and resources for agricultural growth.

A prerequisite for making this a pro-poor initiative is identifying vulnerable groups and assessing their needs. Once identified, potential interventions could include supplying seeds to cope with emergencies, increasing the focus on pastoral issues, creating more responsive and comprehensive early warning systems, providing nutrition-

related assistance to HIV/AIDS households, and establishing other safety net programs. Two expected results from these interventions are fewer households receiving food aid and increased stability of the food supply. One current method of assisting vulnerable groups is providing access to assets, but new approaches are putting emphasis on building-up the asset base of vulnerable groups.

The last focal area that USAID has proposed for interventions is the promotion of environmentally sustainable growth by promoting property and water rights, developing information systems, and promoting community-based integrated livelihood strategies. An expected result is increased development applications for land use systems that are environmentally sustainable and contribute to growth.

This workshop is the first step in mapping out an agricultural strategy for Africa. In early 2002, USAID will hold several consultations at the sub-regional and country level in order to facilitate dialogue. After the initial consultations are completed, the information gathered will be compiled and placed in the public domain. This information will then be used to evaluate the potential impact of different options in the spheres of agricultural technology, infrastructure and public services, trade, markets, etc. on the rural poor in Sub-Saharan Africa. This will point the way for USAID and other donors to make major investments for propelling agricultural growth and reducing poverty in Sub-Saharan Africa.

## **SUMMARY OF REACTIONS TO PROPOSED USAID AGRICULTURAL INITIATIVE TO CUT HUNGER IN AFRICA**

Dennis Weller, Africa/Sustainable Development, USAID  
Chris Delgado, Markets and Structural Studies Division, IFPRI

It was noted that the overlap between the USAID Agriculture Initiative to Cut Hunger in Africa, and the summary of the panel presentations were very complimentary. Many of the issues, challenges, knowledge gaps, new approaches/opportunities, and best bets for the future of agriculture in Sub-Saharan Africa identified over the course of the workshop were also highlighted in the USAID presentation. However, several issues were raised during the discussion following Jeff Hill's presentation.

### *Getting Agriculture on the Development Agenda for Sub-Saharan Africa*

Several participants raised the issue of getting agriculture on the agenda of policy makers, donors and other stakeholders that have the ability to commit resources to agricultural development in Sub-Saharan Africa. It was noted that current levels of donor commitment to agriculture in Africa are very low (for example, the EU currently gives only 6 percent of its total aid to Africa for agriculture and rural development). There was a general feeling that if USAID is to move successfully forward with the strategy, then they will need to influence the development of country Poverty Reduction Strategy Papers (PRSPs) to address the role of agriculture in poverty alleviation. Even then, a number of important questions remain: What is the best way of getting other donors on board? What, if any, mechanisms for donor coordination can be built into the strategy and how will coordination happen? The challenges of convincing donors and other

stakeholders to invest in agricultural development at a time when Africa is only a minor player in world agricultural trade and when the prices of traditional export crops and the terms of trade for agricultural commodities are declining, were also raised.

*African Ownership and Participation in the Strategy*

There was consensus among the workshop participants that there needs to be a strong emphasis in the strategy on attaining African ownership and participation. The strategy needs to be Africa driven and long-term if it is to be successful, and Africans should have some accountability with respect to the implementation and success of the strategy. The question of whether or not African policy makers as well as other key stakeholders need to be convinced of the importance of agriculture for poverty alleviation was raised. It was stressed that we should be wary of taking the policy commitment as given – some countries simply do not have a commitment to agriculture.

Moreover, to ensure sustainability, a wide coalition of local and non-local people needs to be engaged in the development and execution of the agenda. Including a broad array of African stakeholders in the development of this agenda should enable them to assume ownership of it and thereby contribute to its success. In addition to seeding ownership, sustainability depends on a long-term commitment from USAID as well as coordination among donors and sectors. Coordinating efforts is expected to reduce inefficiencies and duplication in efforts as well as leverage greater benefits.

At the local level, involving farmer organizations, NGOs and other local organizations in the delivery of services should be an over-arching development strategy. Community-based organizations need to be empowered to represent themselves at all

levels of decision-making. The importance of developing human and institutional capital as a base for the strategy as soon as possible was highlighted – USAID noted that their strong local focus on mechanisms for change rather than agenda is central to building institutions and human capital.

#### *Monitoring and Measuring Impact*

Concern was expressed as to what the impact assessment process would be and how the primary goals of the strategy would be quantified. The importance of good baseline measures was highlighted, along with the need to get details on levels and rates of change in order to assure that the goals of the strategy are being met. Using measures of alleviating hunger, number of undernourished people etc. as primary indicators of the strategy's success was cautioned against.

#### *Country Selection*

Conference participants expressed concern as to why countries where half of the population suffers from hunger (for example, Ethiopia and Congo) were not included among the targeted countries and why the initiative only included one Francophone country (Mali). It was noted that focus countries would receive additional resources to facilitate their development, and that other countries would still retain previously planned levels of US assistance. Moreover, there would be technology and market spillovers that would benefit the region – so rather than being left out – countries such as Ethiopia and Congo will benefit from the strategy via spillovers.

#### *Do we Really Know Enough to Successfully go Forward with the Strategy?*



The question of whether or not we really know enough about successful agricultural development in Africa to invest in a strategy of this magnitude was raised? Recalling the optimism for African agriculture in the early 1970s, and the subsequent failures of more than 2/3 of agriculture projects on the continent – one can question whether or not there is sufficient new knowledge to go ahead with such an ambitious strategy. Further, in many respects the environment for fostering growth in the agriculture sector has worsened due to increased population and poverty; weaker research, development and public institutions; worsening agricultural terms of trade; and HIV/AIDS. What will guarantee success?

There is reason for optimism in that the volume of empirical studies on African agriculture has increased significantly in the past couple of decades and should not be ignored. Information on both the successes and failures of agriculture in Africa is much more comprehensive and should be utilized to its full potential. In addition, much has been learnt from past experience about implementation, and this will be key to achieving successful agricultural growth in the future. Local partnerships and indigenous initiatives will also be important for success and signify a new approach to promoting agricultural growth.

#### WHAT'S MISSING FROM THE STRATEGY?

Participants identified several issues missing from the strategy including:

- Mechanisms for bulking up the asset base of the poorest of the poor,
- Mechanisms for developing, financing and maintaining rural infrastructure,
- Mechanisms for building safety nets to help the poor,

- A comprehensive communications strategy as a strategic part of the overall USAID strategy as a mechanism for convincing donors, stakeholders and the public that investing in agriculture in Sub-Saharan African is important.

## KNOWLEDGE GAPS

The group was asked to identify key knowledge gaps. These may be viewed as potential topics for future research that would facilitate the understanding of how to promote agriculture in Sub-Saharan Africa:

- Understanding the political economy of policy and decision making at the national level and below in African countries,
- How to reduce risk for potential private sector investors in Africa, and what are new roles for local leaders and governments in motivating the private sector to invest?
- Close examination of the returns to investment of both public and private investments,
- Understanding participatory institutions (including NGOs) – what works best, how are skills transferred, where are the successes and failures and how can they be replicated?
- How can transitional countries (i.e. those moving out of war) most effectively address issues of poverty, food security and rural development?
- What are the best opportunities for reaching people in backward regions that are far removed from markets?

## ANNEX A: WORKSHOP AGENDA

### Workshop on Future Opportunities in Rural Africa International Food Policy Research Institute Washington, D.C., USA

**November 26-27, 2001**

#### *Monday, November 26, 2001*

<i>Introduction</i>	9.00-10.15am
Welcome	Per Pinstrup-Andersen, IFPRI
Introduction of participants	Michael Lesnick, Meridian Institute
Objectives of workshop	Jeff Hill, USAID

#### *Alternative futures for Sub-Saharan Africa*

Sub-Saharan Africa: Recent trends	Rajul Pandya-Lorch, IFPRI
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Discussion

#### *Guiding questions*

- Recent trends in agricultural and economic growth, poverty, food security, demographics, health, environmental conditions, etc. and prognosis for the future if business continues as usual.
- What kinds of scenarios are possible under reasonable assumptions about changes in public policies and investments?

#### *Coffee Break*

10:45-11:00am

#### *Managing trade and market liberalization for rural growth and poverty reduction*

11.00am -1.00pm

Getting markets right in Africa  
The challenge beyond reform

Eleni Gabre-Madhin, IFPRI

Building trade capacity:  
What is needed for growth of  
agricultural and agro-industrial  
exports after structural adjustment

Dirk Stryker, AIRD

Managing trade and market liberalization  
for rural growth and poverty reduction in Africa

Fred Kawuma,  
Eastern Africa Fine Coffees  
Association

Future opportunities in rural Africa:  
The role of and challenges for regional  
international trade in food and income  
security in Sub-Sahara Africa

Howard Sigwele,  
FANRPAN Secretariat

#### Discussion

##### *Guiding questions*

- What kinds of macro and trade policies are needed to promote agricultural growth in African countries?
- Have structural adjustment programs created the right conditions or is something else required? What kinds of domestic market reforms are still needed?
- Where are the market opportunities for agricultural growth? What is the scope for growth in domestic markets?
- What are the promising export opportunities?
- Why is supply response to market incentives still weak despite efficiency gains from liberalization?
- How can Africa improve its ability to compete in foreign and domestic agricultural markets
- How can African farmers compete against subsidized agricultural imports from the rich countries?
- How can African countries add value to their agricultural output?
- How will trade negotiations (bilateral, regional, and multinational) impact on market opportunities for Africa?

#### ***Lunch***

1:00-2:00pm

***Achieving a technological revolution  
to increase agricultural productivity  
and lower unit costs of production***

2.00-3.30pm

Technology strategies for the semiarid regions Efficiency and welfare gains  
Agricultural productivity growth and poverty reduction Can GM crops help the poor? Bt cotton in Makhathini Flats, KwaZulu-Natal

John Sanders,  
Purdue University  
Colin Thirtle,  
Imperial College, London

An institutional reform strategy for agricultural research financing  
Discussion

Derick Brinkeroff,  
Abt Associates Inc.

### *Guiding Questions*

- Given the poor and declining state of national R&D systems in Africa, what kinds of reforms and investments are needed?
- How should national R&D institutions adjust to a changing research environment: biotechnology, IPR, private sector, etc.?
- What are “best bet” technology investments for African agriculture?
- What is on the shelf and what needs to be developed?
- What are the bottlenecks to getting better technologies into farmers’ fields, and how can these be overcome?
- How can Africa harness the communications revolution to improve the welfare of rural people?

### *Coffee Break*

3:30-4:00pm

### *Building the levels of public infrastructure and human capital needed for successful rural growth 4.00-5.30pm*

4.00-5.30pm

The returns to public investment in rural infrastructure

Peter Hazell, IFPRI

Investing in institutions

Ashok Gulati, IFPRI

Discussion

### *Guiding Questions*

- Just how daunting are the needed levels of public investment?
- What should be the priorities among different types of rural investment?
- How can public rural investments be financed, especially in regions with low population density?
- How can they be maintained over time?

- What are the best institutional mechanisms for delivering public services?
- What are the relevant roles of the public, private, and NGO sectors?
- How can public agencies that supply public goods be made more efficient?

**Tuesday, November 27, 2001**

***Making agricultural growth more equitable***

9.00-10.30am

Income and land distribution among  
smallholder farmers in Africa:  
Implications for poverty reduction strategies

Mike Weber  
Michigan State University

Is there a viable future for  
small farms in Africa?

Simeon Ehui, ILRI

Pathways out of poverty:  
Access to assets and HIV shocks

Lawrence Haddad, IFPRI

Discussion

*Guiding Questions*

- Is there a viable future for small farms in Africa?
- What must be done to help small farmers succeed in increasing competitive markets?
- What should be done about the many less-favored areas in Africa that suffer from poor agroclimatic conditions and/or lack of infrastructure and market access?
- What can be done about other disadvantaged groups (women, ethnic)?
- How can the vulnerability of poor people be reduced?
- What kinds of safety nets are needed to manage crises and poverty in Africa?
- How to cope with the HIV/AIDS epidemic in rural Africa?

***Reversing the degradation of natural resources while also accommodating growing rural populations***

11.00am -12.30pm

Strategies for sustainable agricultural  
development in the East African Highlands  
Natural resource degradation:  
Productivity and maintenance  
of soil resources  
Discussion

John Pender, IFPRI

John Sanders,  
Purdue University

*Guiding Questions*

- Under what conditions does induced innovation (“more people, less erosion”) work?
- What policies promote it?

- How can Africa tap its unexploited water resources on a sustainable and efficient basis?
- What policy and institutional reforms (including property rights) are needed to create better incentives for rural people to manage natural resources on a sustainable basis?
- How can environmental, poverty alleviation, and agricultural goals be better integrated into development strategies?
- How should tradeoffs be managed where they arise?
- How will global climate change affect rural Africa?
- How can African farmers mitigate and cope with these effects?

***Lunch***

12:30-1:30pm

***How should USAID position its own investment strategy for rural Africa?***

1:30-5:30pm

Future opportunities in rural Africa:  
What we know and the road ahead  
(Summary of proceedings sessions)

Eleni Gabre-Madhin, IFPRI

Discussion

USAID agricultural initiative to  
cut hunger in Africa

Jeff Hill, USAID

Discussion

Reactions to the proposed strategy

What knowledge gaps need to be filled in order to implement the strategy?

Summary of discussion on USAID strategy

Dennis Weller, USAID  
Chris Delgado, IFPRI

Next steps

Jeff Hill, USAID

***Closing of workshop***

5:00pm



## ANNEX B: WORKSHOP PARTICIPANTS

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